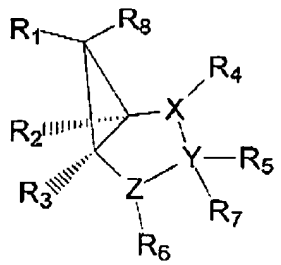
In the Claims

Claim 1 (Currently Amended): A chemical compound comprising the formula:




wherein $R_1$ is a moiety selected from the group consisting of $R_9$, $CH_3$, alkyl groups, substituted alkyl groups, halogen, carboxyl, hydroxyl, phosphate, phosphonate, sugar residues, sugars, aryl, nucleosides, nucleoside monophosphates, nucleoside disphosphates, nucleoside triphosphates, and hydrogen;

$R_2$ is a moiety selected from the group consisting of $R_9$, $CH_3$, alkyl groups, substituted alkyl groups, halogen, carboxyl, hydroxyl, phosphate, phosphonate, sugar residues, sugars, aryl, nucleosides, nucleoside monophosphates, nucleoside disphosphates, nucleoside triphosphates, and hydrogen;

$R_3$ is a moiety selected from the group consisting of $R_9$, $CH_3$, alkyl groups, substituted alkyl groups, halogen, carboxyl, hydroxyl, phosphate, phosphonate, sugar residues, sugars, aryl, nucleosides, nucleoside monophosphates, nucleoside disphosphates, nucleoside triphosphates, and hydrogen;

$R_4$ is a moiety selected from the group consisting of $R_9$, $CH_3$, alkyl groups, substituted alkyl groups, halogen, carboxyl, hydroxyl, phosphate, phosphonate, sugar residues, sugars, aryl, nucleosides, nucleoside monophosphates, nucleoside disphosphates, nucleoside triphosphates, and hydrogen;

$R_5$ is a moiety selected from the group consisting of $R_9$, $CH_3$, alkyl groups, substituted alkyl groups, halogen, carboxyl, hydroxyl, phosphate, phosphonate, sugar residues, sugars, aryl,

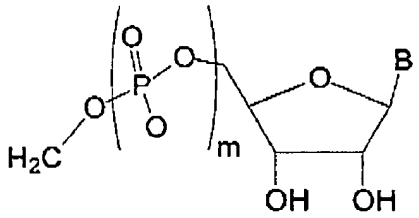
nucleosides, nucleoside monophosphates, nucleoside disphosphates, nucleoside triphosphates, and hydrogen;

$R_6$ is a moiety selected from the group consisting of $R_9$, $CH_3$, alkyl groups, substituted alkyl groups, halogen, carboxyl, hydroxyl, phosphate, phosphonate, sugar residues, sugars, aryl, nucleosides, nucleoside monophosphates, nucleoside disphosphates, nucleoside triphosphates, and hydrogen;

$R_7$ is a moiety selected from the group consisting of $R_9$, $CH_3$, alkyl groups, substituted alkyl groups, halogen, carboxyl, hydroxyl, phosphate, phosphonate, sugar residues, sugars, aryl, nucleosides, nucleoside monophosphates, nucleoside disphosphates, nucleoside triphosphates, and hydrogen;

$R_8$ is a moiety selected from the group consisting of $R_9$, substituted alkyl groups, hydroxyl, phosphate, phosphonate, sugar residues, sugars, nucleosides, nucleoside monophosphates, nucleoside disphosphates, and nucleoside triphosphates;

$R_9$ is




wherein B is adenine, thymine, guanine, cytosine, uracil, nicotinamide, or analogs thereof;

m is 1 or 2;

X, Y, and Z are carbon, nitrogen, oxygen, or sulfur and a double bond may, optionally, exist between atoms X and Y or atoms Y and Z; and

salts or isolated enantiomers of said chemical compound.

Claim 2 (Previously Presented): The chemical compound according to claim 1, wherein said substituted alkyl groups are substituted with a moiety selected from the group consisting of $C_{1-6}$ alkyl, halogen, CN, OH, COOH, $NO_2$, $NH_2$, $SO_{2-4}$, $C_{1-20}$ heteroalkyl, $C_{2-20}$ alkenyl, alkynyl, alkynyl-aryl, alkynyl-heteroaryl, aryl, $C_{1-20}$ alkyl-aryl, $C_{2-20}$ alkenyl-aryl, heteroaryl, $C_{1-20}$ alkyl-heteroaryl,

$C_{2-20}$ alkenyl-heteroaryl, cycloalkyl, heterocycloalkyl, $C_{1-20}$ alkyl-heterocycloalkyl, and $C_{1-20}$ alkyl-cycloalkyl, any of which may be optionally, substituted with a moiety selected from the group consisting of $C_{1-6}$ alkyl, halogen, OH, $NH_2$, CN, $NO_2$, COOH, and $SO_{2-4}$.

Claim 3 (Previously Presented): The chemical compound according to claim 1, wherein said salt is a hydrochloride, hydrobromide, p-toluenesulfonate, phosphate, sulfate, perchlorate, acetate, trifluororacetate, propionate, citrate, malonate, succinate, lactate, oxalate, tartrate, benzoate, magnesium, calcium, morpholine, piperidine, dimethylamine, or diethylamine salt.

Claim 4 (Original): The chemical compound according to claim 1, wherein said isolated enantiomeric forms of the chemical compound are substantially free from one another.

Claim 5 (Original): The chemical compound according to claim 4, wherein said isolated enantiomeric forms of said chemical compound is at least about in 90%, 95%, 97.5%, or 99% enantiomeric excess.

Claims 6-20 (Canceled).

Claim 21 (Previously Presented): The compound according to claim 1, wherein $R_2$ or $R_3$ is a substituted alkyl group.

Claim 22 (Previously Presented): The compound according to claim 21, wherein the substituted alkyl group is substituted with hydroxyl at any available position.

Claim 23 (Previously Presented): The compound according to claim 1, wherein $R_8$ is $R_9$.

Claim 24 (Previously Presented): The compound according to claim 1, wherein $R_8$ is hydroxyl.

Claim 25 (Previously Presented): The compound according to claim 1, wherein $R_8$ is phosphate.

Claim 26 (Previously Presented): The compound according to claim 1, wherein $R_8$ is a phosphonate.

Claim 27 (Previously Presented): The compound according to claim 1, wherein $R_8$ is a sugar residue.

Claim 28 (Previously Presented): The compound according to claim 1, wherein $R_8$ is a sugar.

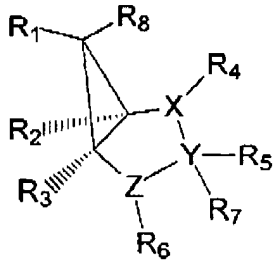
Claim 29 (Previously Presented): The compound according to claim 1, wherein $R_8$ is a nucleoside.

Claim 30 (Previously Presented): The compound according to claim 1, wherein $R_8$ is a nucleoside monophosphate.

Claim 31 (Previously Presented): The compound according to claim 1, wherein $R_8$ is nucleoside disphosphate.

Claim 32 (Previously Presented): The compound according to claim 1, wherein $R_8$ is nucleoside triphosphate.

Claim 33 (Currently Amended): A composition comprising a carrier and a chemical compound, wherein the chemical compound comprises the formula:




wherein $R_1$ is a moiety selected from the group consisting of $R_p$, $CH_3$, alkyl groups,

substituted alkyl groups, halogen, carboxyl, hydroxyl, phosphate, phosphonate, sugar residues, sugars, aryl, nucleosides, nucleoside monophosphates, nucleoside disphosphates, nucleoside triphosphates, and hydrogen;

$R_2$ is a moiety selected from the group consisting of $R_9$, $CH_3$, alkyl groups, substituted alkyl groups, halogen, carboxyl, hydroxyl, phosphate, phosphonate, sugar residues, sugars, aryl, nucleosides, nucleoside monophosphates, nucleoside disphosphates, nucleoside triphosphates, and hydrogen;

$R_3$ is a moiety selected from the group consisting of $R_9$, $CH_3$, alkyl groups, substituted alkyl groups, halogen, carboxyl, hydroxyl, phosphate, phosphonate, sugar residues, sugars, aryl, nucleosides, nucleoside monophosphates, nucleoside disphosphates, nucleoside triphosphates, and hydrogen;

$R_4$ is a moiety selected from the group consisting of $R_9$, $CH_3$, alkyl groups, substituted alkyl groups, halogen, carboxyl, hydroxyl, phosphate, phosphonate, sugar residues, sugars, aryl, nucleosides, nucleoside monophosphates, nucleoside disphosphates, nucleoside triphosphates, and hydrogen;

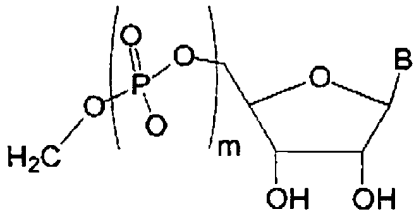
$R_5$ is a moiety selected from the group consisting of $R_9$, $CH_3$, alkyl groups, substituted alkyl groups, halogen, carboxyl, hydroxyl, phosphate, phosphonate, sugar residues, sugars, aryl, nucleosides, nucleoside monophosphates, nucleoside disphosphates, nucleoside triphosphates, and hydrogen;

$R_6$ is a moiety selected from the group consisting of $R_9$, $CH_3$, alkyl groups, substituted alkyl groups, halogen, carboxyl, hydroxyl, phosphate, phosphonate, sugar residues, sugars, aryl, nucleosides, nucleoside monophosphates, nucleoside disphosphates, nucleoside triphosphates, and hydrogen;

$R_7$ is a moiety selected from the group consisting of $R_9$, $CH_3$, alkyl groups, substituted alkyl groups, halogen, carboxyl, hydroxyl, phosphate, phosphonate, sugar residues, sugars, aryl, nucleosides, nucleoside monophosphates, nucleoside disphosphates, nucleoside triphosphates, and hydrogen;

$R_8$ is a moiety selected from the group consisting of $R_9$, substituted alkyl groups, hydroxyl, phosphate, phosphonate, sugar residues, sugars, nucleosides, nucleoside monophosphates, nucleoside disphosphates, and nucleoside triphosphates;

$R_9$ is




wherein B is adenine, thymine, guanine, cytosine, uracil, nicotinamide, or analogs thereof;

m is 1 or 2;

X, Y, and Z are carbon, nitrogen, oxygen, or sulfur and a double bond may, optionally, exist between atoms X and Y or atoms Y and Z; and

salts or isolated enantiomers of said chemical compound.

Claim 34 (Previously Presented): The composition according to claim 33, wherein said substituted alkyl groups are substituted with a moiety selected from the group consisting of $C_{1-6}$ alkyl, halogen, CN, OH, COOH, $NO_2$, $NH_2$, $SO_{2-4}$, $C_{1-20}$ heteroalkyl, $C_{2-20}$ alkenyl, alkynyl, alkynyl-aryl, alkynyl-heteroaryl, aryl, $C_{1-20}$ alkyl-aryl, $C_{2-20}$ alkenyl-aryl, heteroaryl, $C_{1-20}$ alkyl-heteroaryl, $C_{2-20}$ alkenyl-heteroaryl, cycloalkyl, heterocycloalkyl, $C_{1-20}$ alkyl-heterocycloalkyl, and $C_{1-20}$ alkyl-cycloalkyl, any of which may be optionally, substituted with a moiety selected from the group consisting of $C_{1-6}$ alkyl, halogen, OH, $NH_2$, CN, $NO_2$, COOH, and $SO_{2-4}$.

Claim 35 (Previously Presented): The composition according to claim 33, wherein said salt is a hydrochloride, hydrobromide, p-toluenesulfonate, phosphate, sulfate, perchlorate, acetate, trifluororacetate, propionate, citrate, malonate, succinate, lactate, oxalate, tartrate, benzoate, magnesium, calcium, morpholine, piperidine, dimethylamine, or diethylamine salt.

Claim 36 (Previously Presented): The composition according to claim 33, wherein said isolated enantiomeric forms of the chemical compound are substantially free from one another.

Claim 37 (Previously Presented): The composition according to claim 33, wherein said isolated enantiomeric forms of said chemical compound is at least about in 90%, 95%, 97.5%, or 99% enantiomeric excess.

Claim 38 (Previously Presented): The composition according to claim 33, wherein $R_2$ or $R_3$ is a substituted alkyl group.

Claim 39 (Previously Presented): The composition according to claim 38, wherein the substituted alkyl group is substituted with hydroxyl at any available position.

Claim 40 (Previously Presented): The composition according to claim 33, wherein $R_8$ is $R_9$.

Claim 41 (Previously Presented): The composition according to claim 33, wherein $R_8$ is hydroxyl.

Claim 42 (Previously Presented): The compound according to claim 33, wherein $R_8$ is phosphate.

Claim 43 (Previously Presented): The composition compound according to claim 33, wherein $R_8$ is phosphonate.

Claim 44 (Previously Presented): The composition according to claim 33, wherein $R_8$ is a sugar residue.

Claim 45 (Previously Presented): The composition according to claim 33, wherein $R_8$ is a sugar.

Claim 46 (Previously Presented): The composition according to claim 33, wherein $R_8$ is a nucleoside.

Claim 47 (Previously Presented): The composition according to claim 33, wherein $R_8$ is a nucleoside monophosphate.

Claim 48 (Previously Presented): The composition according to claim 33, wherein $R_8$ is a nucleoside disphosphate.

Claim 49 (Previously Presented): The composition according to claim 33, wherein $R_8$ is a nucleoside triphosphate.

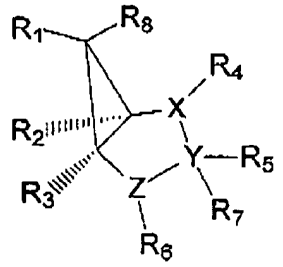
Claim 50 (Previously Presented): The composition according to claim 33, wherein said carrier is a pharmaceutical carrier.

Claim 51(Previously Presented): The composition according to claim 50, wherein said pharmaceutical carrier is solid, liquid, or aerosol.

Claim 52 (Previously Presented): The composition according to claim 33, wherein said composition is in unit dose form.

Claim 53 (Previously Presented): The composition according to claim 33, wherein said carrier is a powder, tablet, pill, capsule, cachet, suppository, or dispersible granule.

Claim 54 (Currently Amended): A method of suppressing, reducing, or inhibiting glycosyltransferase or glycosylhydrolase activity comprising contacting said glycosyltransferase or glycosylhydrolase with a composition, in an amount sufficient to suppress, reduce, or inhibit said glycosyltransferase or glycosyltransferase activity, comprising a carrier and a chemical compound, wherein the chemical compound comprises the formula




wherein $R_1$ is a moiety selected from the group consisting of $R_9$, $CH_3$, alkyl groups,

substituted alkyl groups, halogen, carboxyl, hydroxyl, phosphate, phosphonate, sugar residues, sugars, aryl, nucleosides, nucleoside monophosphates, nucleoside disphosphates, nucleoside triphosphates, and hydrogen;

$R_2$ is a moiety selected from the group consisting of $R_9$, $CH_3$, alkyl groups, substituted alkyl groups, halogen, carboxyl, hydroxyl, phosphate, phosphonate, sugar residues, sugars, aryl, nucleosides, nucleoside monophosphates, nucleoside disphosphates, nucleoside triphosphates, and hydrogen;

$R_3$ is a moiety selected from the group consisting of $R_9$, $CH_3$, alkyl groups, substituted alkyl groups, halogen, carboxyl, hydroxyl, phosphate, phosphonate, sugar residues, sugars, aryl, nucleosides, nucleoside monophosphates, nucleoside disphosphates, nucleoside triphosphates, and hydrogen;

$R_4$ is a moiety selected from the group consisting of $R_9$, $CH_3$, alkyl groups, substituted alkyl groups, halogen, carboxyl, hydroxyl, phosphate, phosphonate, sugar residues, sugars, aryl, nucleosides, nucleoside monophosphates, nucleoside disphosphates, nucleoside triphosphates, and hydrogen;

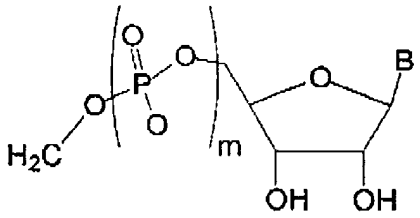
$R_5$ is a moiety selected from the group consisting of $R_9$, $CH_3$, alkyl groups, substituted alkyl groups, halogen, carboxyl, hydroxyl, phosphate, phosphonate, sugar residues, sugars, aryl, nucleosides, nucleoside monophosphates, nucleoside disphosphates, nucleoside triphosphates, and hydrogen;

$R_6$ is a moiety selected from the group consisting of $R_9$, $CH_3$, alkyl groups, substituted alkyl groups, halogen, carboxyl, hydroxyl, phosphate, phosphonate, sugar residues, sugars, aryl, nucleosides, nucleoside monophosphates, nucleoside disphosphates, nucleoside triphosphates, and hydrogen;

$R_7$ is a moiety selected from the group consisting of $R_9$, $CH_3$, alkyl groups, substituted alkyl groups, halogen, carboxyl, hydroxyl, phosphate, phosphonate, sugar residues, sugars, aryl, nucleosides, nucleoside monophosphates, nucleoside disphosphates, nucleoside triphosphates, and hydrogen;

$R_8$ is a moiety selected from the group consisting of $R_9$, substituted alkyl groups, hydroxyl, phosphate, phosphonate, sugar residues, sugars, nucleosides, nucleoside monophosphates, nucleoside disphosphates, and nucleoside triphosphates;

$R_9$ is




wherein B is adenine, thymine, guanine, cytosine, uracil, nicotinamide, or analogs thereof;

m is 1 or 2;

X, Y, and Z are carbon, nitrogen, oxygen, or sulfur and a double bond may, optionally, exist between atoms X and Y or atoms Y and Z; and

salts or isolated enantiomers of said chemical compound.

Claim 55 (Previously Presented): The method according to claim 54, wherein said substituted alkyl groups are substituted with a moiety selected from the group consisting of $C_{1-6}$ alkyl, halogen, CN, OH, COOH, $NO_2$, $NH_2$, $SO_{2-4}$, $C_{1-20}$ heteroalkyl, $C_{2-20}$ alkenyl, alkynyl, alkynyl-aryl, alkynyl-heteroaryl, aryl, $C_{1-20}$ alkyl-aryl, $C_{2-20}$ alkenyl-aryl, heteroaryl, $C_{1-20}$ alkyl-heteroaryl, $C_{2-20}$ alkenyl-heteroaryl, cycloalkyl, heterocycloalkyl, $C_{1-20}$ alkyl-heterocycloalkyl, and $C_{1-20}$ alkyl-cycloalkyl, any of which may be optionally, substituted with a moiety selected from the group consisting of $C_{1-6}$ alkyl, halogen, OH, $NH_2$,, CN, $NO_2$, COOH, and $SO_{2-4}$.

Claim 56 (Previously Presented): The method according to claim 54, wherein said salt is a hydrochloride, hydrobromide, p-toluenesulfonate, phosphate, sulfate, perchlorate, acetate, trifluororacetate, propionate, citrate, malonate, succinate, lactate, oxalate, tartrate, benzoate, magnesium, calcium, morpholine, piperidine, dimethylamine, or diethylamine salt.

Claim 57 (Previously Presented): The method according to claim 54, wherein said isolated enantiomeric forms of the chemical compound are substantially free from one another.

Claim 58 (Previously Presented): The method according to claim 57, wherein said isolated enantiomeric forms of said chemical compound is at least about in 90%, 95%, 97.5%, or 99% enantiomeric excess.

Claim 59 (Previously Presented): The method according to claim 54, wherein $R_2$ or $R_3$ is a substituted alkyl group.

Claim 60 (Previously Presented): The method according to claim 59, wherein the substituted alkyl group is substituted with hydroxyl at any available position.

Claim 61 (Previously Presented): The method according to claim 54, wherein $R_8$ is $R_9$.

Claim 62 (Previously Presented): The method according to claim 54, wherein $R_8$ is hydroxyl.

Claim 63 (Previously Presented): The method according to claim 54, wherein $R_8$ is phosphate.

Claim 64 (Previously Presented): The method according to claim 54, wherein $R_8$ is phosphonate.

Claim 65 (Previously Presented): The method according to claim 54, wherein $R_8$ is a sugar residue.

Claim 66 (Previously Presented): The method according to claim 54, wherein $R_8$ is a sugar.

Claim 67 (Previously Presented): The method according to claim 54, wherein $R_8$ is a nucleoside.

Claim 68 (Previously Presented): The method according to claim 54, wherein $R_8$ is a nucleoside monophosphate.

Claim 69 (Previously Presented): The method according to claim 54, wherein $R_8$ is a nucleoside disphosphate.

Claim 70 (Previously Presented): The method according to claim 54, wherein $R_8$ is a nucleoside triphosphate.

Claim 71 (Previously Presented): The method according to claim 54, wherein said suppression, reduction or inhibition of said glycotransferase or glycohydrolase activity provides therapeutic relief.

Claim 72 (New): The compound according to claim 1, wherein $R_8$ is a substituted alkyl group.

Claim 73 (New): The composition according to claim 33, wherein $R_8$ is a substituted alkyl group.

Claim 74 (New): The method according to claim 54, wherein $R_8$ is a substituted alkyl group.